

REMARKS

Reconsideration and withdrawal of the objection and rejections set forth in the above-mentioned Official Action in view of the foregoing amendments and the following remarks are respectfully requested.

Claims 1, 3-7 and 9-24 are now pending in the application, with Claims 1, 7, 12, 13, 23 and 24 being independent. Claims 2 and 8 have been cancelled without prejudice or disclaimer of the subject matter recited therein. Claims 1, 3, 4, 6, 7, 9-13, 23 and 24 have been amended herein.

The abstract was objected to for its length. It is respectfully submitted that the original abstract was under the limit of 150 words. Nevertheless, the abstract has been further revised to shorten its length and improve its form. Favorable consideration is requested.

Claims 1, 2, 4-8 and 10-24 were rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 5,838,342 (Takahashi et al.). Claims 3 and 9 were rejected under 35 U.S.C. § 103 as being unpatentable over Takahashi et al. in view of U.S. Patent Application Publication No. 2001/0003458 (Shioya). These rejections are respectfully traversed.

As discussed previously, in the image forming apparatus of Takahashi et al., density unevenness is corrected by first forming a test image and then reading the test image to obtain average density data. Based on the value of the average density, a common correction is performed for drive signals for the printing heads. Density variations in the test image can correspond to variations of the ejection characteristics of the nozzles. While Takahashi et al. may measure these density variations, the apparatus does not measure deviations of each of the dots which are formed by ink droplets ejected from each of the nozzles. In particular, at column 1, lines 31-43 and column 14, lines 10-13 and 32-35, Takahashi et al. discusses how the nonuniformity in characteristics of the printing elements can appear as nonuniformity in the size or density of dots printed by the printing elements, which results in density unevenness. This can result from variations in the direction of ink ejection. Nevertheless, Takahashi et al. does not measure the amount of deviation between the ideal and actual landing positions.

Moreover, Applicants submit that Takahashi et al. does not measure the densities of dots corresponding to each respective nozzle. Rather, Takahashi et al. measures differences of densities that correlate to variations of a plurality of nozzles. To just measure the density of a dot from a particular nozzle would be meaningless because density variation in Takahashi et al. is influenced by deviation of a direction of ink ejection as well as the size of the dot.

Thus, Takahashi et al. at least does not measure an amount of deviation between an ideal landing position of an ink droplet ejected from each of the nozzles of the printhead onto the printing medium and an actual landing position of the ink droplet ejected from each of the nozzles of the printhead onto the print medium, as is recited in each of independent Claims 1, 7, 12, 13, 23 and 24.

Accordingly, Takahashi et al. fails to disclose or suggest important features of the present invention recited in independent claims.

Shioya is directed to an ink jet recording apparatus and method that can precisely detect the cause of image quality deterioration. However, Shioya is not believed to remedy the deficiencies of Takahashi et al. noted above with respect to the independent claims.

Thus, independent Claims 1, 7, 12, 13, 23 and 24 are patentable over the citations of record. Reconsideration and withdrawal of the §§ 102 and 103 rejections are respectfully requested.

For the foregoing reasons, Applicants respectfully submit that the present invention is patentably defined by independent Claims 1, 7, 12, 13, 23 and 24. Dependent Claims 3-6, 9-11 and 14-22 are also allowable, in their own right, for defining features of the present invention in addition to those recited in their respective independent claims. Individual consideration of the dependent claims is requested.

Applicants submit that the present application is in condition for allowance. Favorable reconsideration, withdrawal of the objection and rejections set forth in the above-noted Office Action, and an early Notice of Allowability are requested.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Mark A. Williamson', written over a horizontal line.

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